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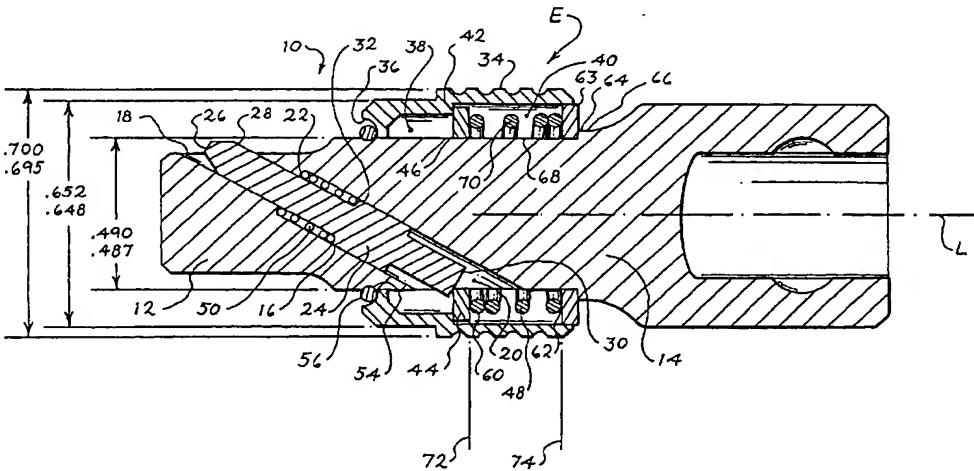
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Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUICK RELEASE MECHANISM FOR TOOLS SUCH AS SOCKET WRENCHES



(57) **Abstract:** A tool of the type having a drive stud (10) for receiving and releasing a tool attachment includes an opening (16) in the drive stud (10) and a locking pin (24) movably mounted in the opening (16). The opening (16) defines first and second ends (18, 20), and the first end (18) of the opening (16) is located at a portion of the drive stud (10) constructed for insertion into the tool attachment. An actuating member (34) is movably positioned on the drive stud (10), and the actuating member (34) defines a sliding surface (44) that engages the pin (24). A first spring (48) biases the sliding surface (44) toward the pin (24), and a second, weaker spring (50) biases the pin (24) toward the sliding surface (44). The first spring (48) reacts against a ring (63) that is disposed between the spring (48) and a shoulder (64) formed on the tool. The shoulder (64) extends away from the longitudinal axis of the drive stud (10) by a lesser distance than the spring (48) or the ring (63).

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/32633

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B25B 23/16
 US CL : 81/177.85; 403/325

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 81/177.2, 177.85; 403/325

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,768,405 A (NICKIPUCK) 06 September 1988, see entire document.	4-7
A	US 4,848,196 A (ROBERTS) 18 July 1989, see entire document.	4-7
A	US 4,938,107 A (NICKIPUCK) 03 Jul7 1990, see entire document.	4-7
Y	US 5,644,958 A (ROBERTS et. al.) 08 July 1997, see entire document.	4-7
Y	US 5,813,296 A (HOFF et. al.) 29 September 1998, see entire document.	4-7
Y	US 5,911,800 A (ROBERTS et. al.) 15 June 1999, see entire document.	4-7
Y	US 6,182,536 B1 (ROBERTS et. al.) 06 February 2001, see entire document.	4-7

Further documents are listed in the continuation of Box C.

See patent family annex.

• Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/32633

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claim Nos.: 1-3 and 8-17
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Please See Continuation Sheet

3. Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

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Continuation of Box I Reason 2:

Claim 1 is inoperative as it lacks sufficient structure to operate, i.e. a sliding sleeve, which is only recited in claim 4.
Claims 2 and 3 are inoperative as the spring cannot engage the shoulder if it is larger than the shoulder as broadly claimed.